Public Responses to Extreme Events – Top 5 Disaster Myths

Monica Schoch-Spana
Center for Biosecurity of the
University of Pittsburgh Medical Center

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About a week ago, several colleagues at the Biosecurity Center and I were discussing future initiatives on the topic of "citizen engagement" in public health preparedness and response – whether a biological attack or an influenza pandemic.

Commenting on "lessons learned" from Katrina, one colleague remarked that "We've seen what people do when they don't have life's basic necessities and they're at the end of their rope – the situation reverts to a jungle-like scenario."

Now "jungle" is a word with very strong connotations, so I was taken aback when I heard it in the context of the Katrina tragedy. The connotations that most quickly come to mind are:

- The Hobbesian view of humanity's true nature underneath the surface of civilization – "eat or be eaten."
- The racialized image of "native unrest and savagery."

Setting aside that troubling aspect of the conversation…what also struck me was the lack of analytic and empirical rigor that my colleague was applying to the problem of social behavior following a catastrophic event.

This individual, for instance, would hardly resort to understanding the clinical and epidemiological intricacies of a biological attack involving an aerosolized anthrax release, based on dominant media images and/or sporadic news reports issued in the midst of an evolving and chaotic situation. Nor would he or she presume to know the biological "truths," so to speak, about the course of inhalational anthrax infection and treatment without an empirical inquiry and medical evidence.

Similarly, no team of engineers would argue with certainty that they understood why – from a dynamic process perspective – the World Trade Center Towers crumbled into a toxic, heaping pile of rubble and dust, until they had undertaken a forensic examination of the remaining structure and reviewed the initial building design and materials, among other things.

Some would argue that science of all kinds has had a hard time maintaining its ground in public policy circles now and in the past. BUT, I would argue that the social and behavioral sciences have had the toughest "row to how" in the current environment – particularly in the terrorist and counter-terrorist arena. One finds a strong inclination to act on hunches and unquestioned "common sense" notions about public responses to extreme events.

With a 15 minute talk today, I thought listing the top myths about mass responses to disaster would make the best use of our time and set the stage for discussion. My plan is to relate the key disaster myths, present the facts that call them into question, and illustrate them through specific case studies.

I am exploiting the work of other scholars, namely those in the history of medicine and the sociology of hazards and disasters. Special thanks to:

- John Barry
- Gregory Button
- Lee Clarke
- Alfred Crosby
- Russell Dynes
- Henry Fischer III
- Tom Glass
- Eric Klinenberg
- Judith Walzer Leavitt
- Denis Mileti
- Walter Peacock
- E.L. Quarantelli
- Kathleen Tierney
- Many others…

MYTH #1: **Disasters are equal opportunity events; they happen in random and quirky, but essentially democratic ways.[1] Hurricanes, outbreaks, heat waves, earthquakes, and chemical spills kill indiscriminately. They do not care "who" the victim is.**

FACT: People are more or less vulnerable to the effects of disasters; social class, ethnicity and race, gender, and social connected-ness are factors that often determine the extent of harm. These traits also play an important role in resilience to, and speedier recovery from crisis.

1995 Chicago Heat Wave Singled Out the Poor, the Elderly, and the Isolated[2]

- Between July 13 and July 20, Chicago experienced a record-breaking heat wave that claimed more than 700 lives.

- Most victims were low-income elderly people who lived alone, were isolated from friends and family, and were left abandoned for days before being discovered. 73% of the victims were age 65 or older, a majority of whom were African-American.

- Deaths were not caused by extreme temperatures alone; existing social conditions common to urban areas compounded the effects of the heat. A substantial number of seniors live alone in unsafe, decrepit, low-income housing in neighborhoods that have been abandoned by businesses, service providers, and many residents.

- These conditions create a culture of isolation and fear that discourages seniors from trusting neighbors or even leaving their homes. Minority seniors were especially vulnerable to the heat wave because they were largely homebound, with no one checking in on them and nowhere to turn for help.

[1] Walter Peacock. *Consequences of Disaster Myths*, 30th Annual Hazards Research and Applications Workshop, Boulder, CO, July 12, 2005.

[2] Eric Klinenberg. *Heat Wave: A Social Autopsy of Disaster in Chicago*. Chicago, IL: University of Chicago Press; 2002.

MYTH #2: **Whether people comply with evacuation plans, isolation and quarantine, or other public health and safety orders is strictly a matter of "personal choice."**

FACT: The problem of "non-compliance" has less to do with handling willful, obstinate or ignorant individuals than with rectifying life circumstances that interfere with an ability to act according to authorities' reasonable requests.

- University of New Orleans researchers who surveyed the city's residents about their personal hurricane evacuation plans in 2004 estimated that at least 100,000 New Orleans residents had no means to evacuate: no car, not enough money for airfare or a bus ticket, no friends or family to help them leave town.[3]

- Fear of loss of income was the most common reason given by Toronto residents who met the eligibility criteria for home-quarantine during the city's SARS epidemic but who did not act on this knowledge.[4]

- Homelessness, drug addiction, and mental illness, for instance, impeded many disadvantaged tuberculosis patients in the 1990s from fully completing their rigorous, medical treatment schedule, thus posing the risk of developing drug resistant strains of TB during the larger HIV/AIDS epidemic.[5]

- During the 1918 Spanish Flu pandemic, some Baltimore city residents berated health officials for curtailing retail business hours to control influenza's spread: hourly workers lost wages including income to pay for extra heating fuel, an item they considered more critical to protecting their families.[6]

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[3] Cox News Service. Many New Orleans residents had no evacuation plan. September 2, 2005.

[4] Clete DiGiovanni, Jerome Conley, Daniel Chiu, and Jason Zaborski. Factors influencing compliance with quarantine in Toronto during the 2003 SARS outbreak, *Biosecurity and Bioterrorism* 2004;2(4).

[5] Ron Bayer and Laurence Dupuis. Tuberculosis, public health, and civil liberties, *Annual Review of Public Health* 1995;16:307–26.

[6] Monica Schoch-Spana. Psychosocial consequences of a catastrophic outbreak of disease: Lessons from the 1918 pandemic influenza. In: Robert Ursano, Ann Norwood, and Carol Fullerton, eds. *Bioterrorism: Psychological and Public Health Interventions*. New York: Cambridge University Press; 2004, pp. 38-55.

MYTH #3: **When life and limb are threatened on a mass scale, people panic. They revert to their savage nature, and social norms readily break down.**

FACT: According to extensive social research, people rarely fall apart and put themselves first.[7,8,9,10] This finding contradicts what people tend to say on surveys that ask them how they *think* they will behave when disaster hits. In reality, people may feel fearful, anxious and capable of doing just about anything to protect their loved ones. They may be irritable with politicians and safety professionals and ignore their advice when it is irrelevant to their situation. But, contrary to the scary stories authorities tell each other, panic is the exception. Creative coping is the norm.

- Ordinary people emerge as innovative problem-solvers who are responsive to the needs of others around them. This pro-social response has been documented by researchers over several decades in countless disasters, and has been bolstered by reports of the reasoned and altruistic responses of those directly affected in the 9/11 attacks and the recent London bombings. People react in disaster the same way they live: as parents, as co-workers, neighbors, members of faith communities.

- Regular people are not merely disaster victims who must rely on trained responders for protection. Studies show that the majority of people rescued are saved by non-professionals who happen to be in the immediate vicinity. 49 of 50 people saved from the rubble of the 1989 Loma Prieta earthquake in California were rescued by a group of 8 Mexican construction workers who have long since been forgotten in the larger U.S. cultural narrative of the heroic efforts by trained, search-and-rescue professionals.[11]

[7] Lee Clarke. Panic: Myth or reality? *Contexts* 2002; Fall:21–6.

[8] E.L. Quarantelli. The sociology of panic. In: Smelser N, Baltes PB, eds. *International encyclopedia of the social and behavioral sciences*. New York: Pergamon Press; 2001:11020–30.

[9] Henry W. Fischer. *Response to disaster: Fact versus fiction and its perpetuation*. Lanham, MD: University Press of America; 1994.

[10] Russell R. Dynes and Kathleen J. Tierney, eds. *Disasters, collective behavior and social organization*. Newark, DE: University of Delaware Press; 1994.

[11] Tom Glass. Workshop remarks, *Citizens' Information Needs in Responding to Disaster*. Computer Science and Telecommunications Board of the NAS/National Research Council, Washington, DC, July 19, 2005.

MYTH #4: **Centralized, insular decision-making and authority structures among trained professionals guarantee the least harm to people and property. Ordinary civilians and everyday institutions are inadequate to deal with crises.**

FACT: Shared problem-solving across sectors and social groups, rather than imposing authority from outside, is a more effective tool for handling extreme and/or unanticipated events.[12]

The very different outcomes of two U.S. smallpox outbreaks—one in Milwaukee in 1894 and the other in New York in 1947—suggest that disease controls that compromise democratic ideals of self-determination and equality of persons can inadvertently spread an epidemic further.[13]

CASE STUDY – SMALLPOX IN MILWAUKEE 1894

- Facing a citywide outbreak, Milwaukee health authorities forcibly removed infected individuals to isolation hospitals considered substandard, selectively using this technique among impoverished immigrants.

- Wealthier smallpox patients were placed under quarantine and encouraged to care for their afflicted loved ones in the comfort of their own homes.

- Perceived to be discriminatory and authoritarian, these public health measures caused month-long riots and ultimately abetted the spread of smallpox.

- Outbreak Impact: 1,079 cases, 244 deaths

CASE STUDY – SMALLPOX IN NYC 1947

- NYC officials effectively quelled outbreak by implementing a voluntary mass vaccination campaign that was universally applied, carrying out an elaborate public relations campaign, and involving grassroots organizations.

- Health officials were legally authorized to vaccinate people or move patients to hospitals forcibly, but coercive measures were unnecessary in the context of a community-wide and evenly applied containment campaign.

- 6,350,000 people were vaccinated in 4 weeks (5 million along in the first 2 weeks)

- Outbreak impact: 12 cases, 2 deaths

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[12] Russell R. Dynes. Community emergency planning: false assumptions and inappropriate analogies. *International Journal of Mass Emergencies and Disasters* 1994;12(2):141-158.

[13] Judith W. Leavitt. Public resistance or cooperation? A tale of smallpox in two cities. *Biosecurity and Bioterrorism*. 2003;1(3):185-92.

MYTH #5: **Acts of God and Nature are pre-ordained. There is no real way to thwart their ultimate outcome. The same goes for Bureaucratic Red-Tape, another so-called immutable force.**

FACT: Modern disasters are complex, dynamic events. They involve the interaction of multiple systems – society, the built environment, and the natural world. Thoughtful tinkering to align these systems can help reduce hazards, though never remove them entirely.[14]

- Hurricane and earthquake hazards have lessened over time in the U.S. as building codes have improved the resistance of buildings to damage, the prediction of weather and geologic events has become more precise, and public warning systems and evacuation plans have been put in place.
    - According to Storm Data, for the 1975 to 1994 period hurricanes were the second most costly natural hazard in terms of property losses and the third most injurious. Because of advance warnings and emergency preparedness, hurricanes are only the seventh-leading cause of death due to natural disasters.[15]
- In 1995, Washington Monthly chronicled the successful reform of FEMA, from what many considered to be the "worst" federal agency to the best.[16]
    - Transformation took place in the aftermath of Hurricane Andrew, August 24, 1992. The storm leveled a 50-mile path across Southern Florida, leaving almost 200,000 people homeless and 1.3 million without electricity. Food, clean water, shelter, and medical assistance were in short supply. FEMA was absent for the first 3 days, and once on the scene, it poorly managed the relief effort.
    - FEMA was hampered by its lack of experienced managers and by its reactive posture to disaster, seeing itself as a "last responder" whose primary role was to distribute loans for rebuilding after a disaster. FEMA had 10 times the proportion of political appointees of most other government agencies.
    - Organizational restructuring, mission re-evaluation, energetic oversight, and strong leadership turned the agency around…

[14] Dennis S. Mileti. *Disasters by design: a reassessment of natural hazards in the United States.* Washington, DC: John Henry Press, 1999.

[15] Ibid, p. 76, 78.

[16] Daniel Franklin. The FEMA phoenix: reform of the Federal Emergency Management Agency. *Washington Monthly* July/August 1995. Available at http://www.washingtonmonthly.com/features/2005/0509.franklin.html; accessed September 2, 2005.

CONCLUSIONS

Emergency planning assumptions backed by empirical research, not hunches or common-sense notions:

- Disasters have the most profound effects for the already vulnerable members of society. Disasters are not equal opportunity events.

- Life circumstances – such as economic means, educational levels, and states of social isolation or connection – are more frequently the contributors to people's failure to heed reasonable official instructions, NOT individual traits of obstinacy or willfulness.

- In conditions of grave danger, creative coping is the norm and panic the exception.

- Shared problem-solving models, rather than ones of command-and-control, provide opportunities for flexibility and innovation, and a higher likelihood of enhanced preparedness, response, and recovery.

- The outcomes of a disaster – whether so-called natural, technological or terrorist-driven – are not set in stone or predetermined. That said, interventions must take into consideration complex interactions among citizens and government, as well as physical, natural, and built environments.